

CLAIMS:

1. A reciprocating cutting tool configured for orbital cutting,
comprising:

a housing;

a power source disposed in said housing;

5 a main linkage connected to said power source and to a blade for
driving the blade in a vertically reciprocating motion;

a foot plate connected to said housing and including a portion in
operational proximity to the blade; and

a swivel bracket connected to said foot plate and disposed to exert an
10 orbital force to a rear edge of the blade.

2. The tool of claim 1 further including a swivel linkage driven
by said main linkage for exerting an eccentric force on said swivel bracket for
creating said orbital force on the blade.

3. The tool of claim 2 wherein said foot plate is laterally slidable
on said housing to move said swivel bracket out of engagement with the blade.

4. The tool of claim 3 wherein said swivel bracket has a swivel
bracket holder connected to said foot plate by a pair of tabs so that said swivel
bracket moves with said foot plate.

5. The tool of claim 3 further including a cam lever lock for releasably locking said foot plate and said swivel bracket in relation to said housing.

6. The tool of claim 3 wherein said main linkage includes a plunger configured for reciprocal movement relative to said housing and having an end configured for accommodating the blade, said plunger convertible for scrolling or standard reciprocal operation upon the sliding of said swivel bracket
5 out of engagement.

7. The tool of claim 2 wherein said swivel linkage includes a reciprocating pusher driven by said main linkage along a longitudinal axis which parallels the movement of the blade.

8. The tool of claim 7, wherein said swivel bracket includes a portion configured for operating in a see-saw motion when engaged by said pusher.

9. The tool of claim 7 wherein said swivel bracket includes a holder configured for mounting to said foot plate, and a rocker member pivotally joined to said holder, the rocker member having a blade engaging end for engaging the rear of the blade to create the orbital motion, and a landing end

opposite the blade engaging end, said landing end being biased toward said housing, said pusher engaging said landing end to pivot the blade engaging end in an arc against the blade, causing the orbital action.

10. The tool of claim 9 further including a roller on the blade engaging end of said rocker, said roller configured for rotatably engaging the blade.

11. The tool of claim 1 wherein said swivel bracket is configured to engage the blade at a location which is generally coplanar with said foot plate.

12. The tool of claim 1 wherein said main linkage includes an elongate plunger operated by a scotch yoke mechanism for vertical reciprocating motion relative to said housing, a lower end of said plunger configured for receiving the blade.

13. The tool of claim 12 further including a bottom bushing supporting a lower end of said plunger and accommodating lateral movement of the plunger.

14. The tool of claim 13 wherein said bottom bushing includes a track and said plunger is equipped with a bushing block having at least one surface for engaging said track for guiding lateral movement of said plunger.

15. The tool of claim 14 wherein said track and said bushing block have complementary hemispherical surfaces.

16. The tool of claim 13 further including an orbital control disposed in said lower bushing for controlling the amount of lateral movement of said plunger.

17. The tool of claim 16 wherein said orbital control is an orbital pin transversely mounted in said lower bushing and having at least one cam surface for selectively limiting the amount of lateral movement of said plunger depending on the rotational position of said orbital pin.

18. The tool of claim 17 wherein a portion of said at least one cam surface of said orbital pin permits no lateral movement of said plunger, so that said plunger may be converted to scrolling or standard reciprocating operation.

19. The tool of claim 1 further including a plunger having a first end connected to a spherical bearing, and a second end connectable to the blade, and including a spherical bearing for supporting said plunger near said second end during said orbital motion.

20. The tool of claim 19 wherein said spherical bearing includes a pair of spaced spherical surfaces secured to said plunger and a track defining a lateral forward and back range of movement for said surfaces, said track including concave surfaces configured for accommodating lateral movement of said spherical surfaces as said plunger effects said orbital movement.

21. The tool of claim 20 further including an orbital pin which is selectably rotatable to adjust the amount of travel of said spherical surfaces and said plunger in said track from no movement to full orbital movement.

22. An electric jigsaw, comprising:

a housing;

a power source disposed within said housing;

a main linkage disposed within said housing and connected to said

power source;

a plunger secured within said housing and connected to said linkage for reciprocal, pivotal and rotational movement, and having an end configured for receiving a blade; and

a selector mechanism for selecting between said pivotal and said
5 rotational movement of said plunger;

wherein said pivotal movement relates to orbital blade motion, and said rotational movement relates to scrolling blade motion.

23. The jigsaw of claim 22 further including a foot plate connected to said housing, said foot plate being provided with a swivel bracket disposed to exert an orbital force to a rear edge of the blade and cause said plunger to begin pivotal movement.

24. The jigsaw of claim 22 wherein said selector mechanism includes a transverse orbit pin connected to a scroll lock arm which is adjustable at
10 least between a first position for preventing scrolling during pivoting motion by said plunger, and a second position preventing pivoting action and permitting rotational motion.

25. The jigsaw of claim 24 further including a bottom bushing supporting a lower end of said plunger and accommodating pivotal movement of
15 the plunger, said bottom bushing includes a track and said plunger is equipped

with a bushing block having at least one surface for engaging said track for guiding pivotal movement of said plunger.

26. The jigsaw of claim 25 wherein said track and said bushing block have complementary hemispherical surfaces.

27. The jigsaw of claim 24 wherein said orbit pin is transversely mounted in said bottom bushing.